LOCATION	COMMENT
V1 xix par 3	It is stated that elevated concentrations of radionuclides and SVOCs are confined to the upper 6 feet of soil and in most cases in the upper inches of soil How can this statement be made when the shallowest soil boring sample was a six foot composite starting from the ground surface and the surficial soil samples were taken to a depth of five cm? Neither of these samples are appropriate for the root zone of plants Furthermore how can it be said in most cases when all we have is a six foot composite and a five cm sample?
V1 xx par 3	Include a summary of risk at the source without refering to it as a hot spot Include a summary of hazard quotients including risk at the source
V1 xxi	Include a summary paragraph on the environmental evaluation
V1 xxi par 2	Overall this paragraph is good However the comparability of the human health and ecological risk assessments in this document are poor While PAHs and PCBs were included as COCs for human health they were totally ignored in the environmental evaluation Also exposure assessment modeling performed for human health was not conducted or even considered for the environmental evaluation These are both major weaknesses of this document and should be corrected in the final
V1 p 1 25 par 3	Were radionuclide analyses of surficial soil samples analyzed at DQO Level V?
V1 p 4 4 par 1	It is stated that when results exceed background by an order of magnitude or more it is likely indication of contamination This essentially states that all the background characterization work at the RFP was for naught. An order of magnitude is completely arbitrary Chemicals in excess of background should be considered to be potential contaminants pending process knowledge historical information etc This should cause the questioning of the adequacy of the background characterization and possibley the statistical analysis of the data
V1 p 4 4 par 2	With regard to literature reported ranges of background values they have no use at the RFP given the investment we have made in background characterization Again process knowledge and historical information should be used to question measurements in excess of background
V1 p 4 5 Sec 4 1 par 1	Comparing surface water with groundwater seems inappropriate Why is no background information available for surface water? How can one sediment background sample be statistically valid? Overall the design of the background charcterization program

	appears to be highly questionable
V1 p 4 7 par 1	What is the statistical power associated with the statistical tolerance intervals? Include in the final document
	[redacted]
V1 p 4 9 par 2	Why were rinse blanks not analyzed for metals and radionuclides?
V1 p 4 12 par 3	Three times background is arbitrary Furthermore americium 241 plutonium 239 and 240 are not natural
	Two times background is arbitrary
V1 p 4 13 par 2	When will the radionuclide results be available? These results should be included in the final document
V1 p 4 14 last par	An order of magnitude above background is arbitrary
V1 p 4 15 par 1	Three times background is arbitrary
V1 p 4 15 par 2	Two times background is arbitrary
V1 p 4 16 par 4	Three times background is arbitrary
V1 p 4 16 par 5	Two times background is arbitrary
V1 p 4 19 par 4	Two times background is arbitrary
V1 p 4 21 par 6	Four times background is arbitrary
V1 p 4 24 par 1	Exceeding background by an order of magnitude is arbitrary
V1 p 4 24 par 2	Three times background is arbitrary
V1 p 4 28 par 2	Exceeding background by an order of magnitude is arbitrary
V1 p 4 28 par 3	Two times background is arbitrary
V1 p 4 30 par 1	Two times background is arbitrary
V1 p 4 30 par 2	Two times background is arbitrary
V1 p 4 31 par 4	Exceeding background by an order of magnitude is arbitrary
	Two times background is arbitrary
V1 p 4 32 par 1	Two times background is arbitrary
V1 p 4 34 par 3	Six times background is arbitrary
V1 p 4 36 par 3	When will the 4th quarter 1991 sediment data be available? They should be presented in the final report

V1 p 4 37 par 1	Data should also be presented for analytes less that or equal to background We should not arbitrarily delete data from the report
V1 p 4 40 par 3	Exceeding background by an order of magnitude is arbitrary
V1 p 4-41 par 2	Exceeding background by an order of magnitude is arbitrary
V1 p 4-46 par 2	Exceeding background by an order of magnitude is arbitrary
V1 p 4 48 par 1	When will results from subsequent quarters in 1992 be available? They should be included in the final report
V1 p 4 48 par 4	Two times background is arbitrary
V1 p 4 49 par 4	How was background for biological tissues determined? The background data and statistical methodologies employed should be included in the final report In addition the statistical power should be included in the final report
V1 p 4 52 par 1	Two and five times background are arbitrary
V1 p 4 52 par 2	Why is 1 5 pCi/g significant?
V1 p 4 54 par 3	With regard to SVOCs did the RFP power plant historically burn coal If so could this be a possible source at OU 1? Is there any information regarding incinerator use at building 881? If so could this be a possible source of SVOCs at OU 1?
V1 p 4 68 par 3	A statement is made that only background concentrations that exceed background by more than a factor of ten are considered indicative of contamination Use of a factor of ten above background for the determination of the nature and extent of contamination is arbitrary
V1 p 4 70 par 2	Use of a factor of ten above background for the determination of the nature and extent of contamination is arbitrary
V1 p 4 70 par 3	Exceeding background by an order of magnitude is arbitratry
V1 p 5 19 par 3	This paragraph seems out of place for an RI/RFI Report It should be deleted from the final document Mehtanogenic bacteria is not correct It should be replaced with methanotrophic bacteria
V1 p 5 37 par 1	For naphthalene should the solubility be 32 mg/l?
V1 p 5 45 par 3	Trace elements/metals above background or above ten times background?
V1 p 5 48 par 3	Metals approaching background or ten times background?
V1 p 5 59 Sec	The exposure assessment modeling for OU 1 did not include

5 3 2	ecological receptors Section VIII.C Attachment II of the RFP IAG states that DOE shall utilize the Interim Final Risk Assessment Guidance for Superfund Environmental Evaluation Manual in preparing this plan Inspection of page 41 of this document indicates that exposure assessment modeling for ecological recptors is a requirement Futhermore to the extent possible exposure assessment modeling for human and ecological receptors should be combined The final document should include exposure assessment modeling for ecological receptors
V1 p 5 63 par 2	Assuming that each IHSS is uniformly contaminated over its entire area is a very large assumption given that the surficial soil sampling program was not designed to evaluate the nature and extent of contamination at the individual IHSSs
V1 p 6 2 last line	Replace releases are with releases are or may in the future
V1 p 6 4 Sec 6 2 2	Having to resort to two times background does not reflect well on the background characterization effort at the RFP There has been no exposure assessment modeling conducted for ecological receptors which contradicts the IAG and EPA guidance incorporated into the IAG which was signed by DOE EPA and CDH Furthermore no attempt has been made to relate the exposure assessment modeling from the human health risk assessment to the ecological risk assessment
V1 p 6 6 par 3	Stating that Hg exceeded background by less than 30 percent is arbitrary if trying to discount it
V1 p 6 7 par 3	Stating that Hg and Pb exceeded background by less than twofold is arbitrary if trying to discount it
V1 p 6 8 par 3	Are comparisons to Rock Creek as a reference or control area valid if it is a poor reference or control area?
V1 p 6 9 par 3	See comment for V1 p 6 8 par 3 above
V1 p 6 10 par 2	State in the final report very clearly what the measurement and assessment endpoints are Relate to the Workplan and Field Sampling Plan
V1 p 6 10 Sec 6 2 4	Is the first bullet true for PAHs and PCBs identified as COCs for the Human Health Risk Assessment that were ignored in the EE?
V1 p 6 11 1st bullet	The use of twofold above background is arbitrary
V1 p 6 11 4th bullet	If Rock Creek is not a reasonable reference or control area this bullet is questionable in value
V1 p 6 12 par 2	Is the current RFP water source industrial of municipal?

V1 p 6 14 par 1	These bullets do not include risk at the source as required by Section VII D 1 b Attachment II of the IAG Risk at the source should be included in the bullets in the final document. In addition risk at the source should not be referred to as a hot spot unless the extent of contamination is a relatively small fraction of the size of a residential lot Explain the source of the two order of magnitude difference between the current and future onsite worker in this portion of the report (i e different assumptions regarding exposre)
V1 p 6 15 Sec 6 3 2	With regard to arsenic radon and PAHs (from volcanoes!) these risk comparisons are not appropriate for a Baseline Risk Assessment and should be deleted from the final document Risk comparisons are appropriate for the Feasibility/Corrective Measures Study and should be located there
V1 p 6 17 par 1	If IHSS 199 1 contamination is significant relative to the residential lot size (approx 50 feet by 100 feet) it should be referred to as risk at the source rather than a hot spot This change should be made to the final document at all appropriate locations
V1 p 6 18 par 4	This risk comparison should be eliminated from the Baseline Risk Assessment in the final document Again risk comparisons should be located in the FS/CMS report since this is where risk management belongs
V1 p 7 6 par 1	Why were PAHs and PCBs not evaluated in Woman Creek and SID sediments as indicated in (13)? This is is a significant deficiency How will this be rectified for the final RI/RFI and FS/CMS?
V1 Table 4 1	Include method(s) of background determination as footnotes Differentiate between analytes not detected versus not analyzed in the final document This is an important difference for background determination
V2 Figure 2 11	Include sediments in this figure
V2 Figures 4 3 thru 4 12	Explain why no borings were placed in the interior of IHSS 102? How can we consider this RI/RFI adequate if soil samples in the interior of the IHSS have not been characterized? If data were collected in the Phase I and II RFI/RI they should be summarized in figures as well as the text in the final document
V2 Figures 4 49 thru 4 58	See comment for V2 Figures 4 3 thru 4 12?
V2 Figure 4 81	Inspection of this figure indicates that surficial soil samples were not collected from IHSSs 103 104 107 145 and the former retention pond This indicates that surficial soil was not characterized For IHSSs 103 and 104 this may be acceptable as they are buried sources However explain the implications

	of no sampling at IHSSs 107 and 145? Are two samples from IHSS 119 2 and three samples from IHSS 119 1 sufficient to charcaterize the nature and extent of surficial soil contamination? It is inappropriate that more sample locations are located outside the IHSSs than inside the IHSSs How does this impact DOEs ability to evaluate risk at the source as required by Section VII D 1 b Attachment II of the IAG?
V2 Figure 4 87	This figure indicates that no sediment samples were collected in Woman Creek for the RI/RFI at OU 1 If this is true can we adequately discuss the impact of OU 1 on Woman Creek? Are the three monitoring stations shown on this figure sufficient to evaluate the impact of OU 1 on surface water quality? These stations appear to be upgradient of the bulk of the IHSSs at OU 1 This is relevent since the SID postdates many of the OU 1 IHSSs
V2 Figure 6 1	This figure indicates that PRGs were part of the scoping process at the RFP However this was not the case This figure should be modified or the text expanded to explain that PRGs were not determined
V14 p xi par 4	The IAG Attachment II Section VII D 1 b requires DOE to evaluate risk at the source Use of the term hot spot is only appropriate is the size is small to a residential lot of approx 50 feet by 100 feet If this is not the case the term hot spot should not be used in the final document
V14 p F2 1 par 3	When will the additional quarters of Phase III ground water data be available for 1992? These data should be included in the final document
V14 p F2 2 par 2	With regard to subsurface soil COCs it should include 1) subsurface releases and 2) surface releases currently covered by fill
V14 p F2 2 par 3	The definition of a hot spot is inadequate Particular area should be defined as a small fraction of a residential lot sized approx 50 feet by 100 feet The final document should be revised accordingly
V14 p F2 6 par 1	It is stated that the F Test compares the means between the site and background populations However the F Test is used to establish whether or not the variances of the samples are significantly different The COC selection process should be revisited and a revised COC list prepared using appropriate statistical methodology prior to the final document In addition COCs should not be selected using OU averaged values since this dilution may result in the loss of COCs for the risk assessment All COCs should be selected such that

	risk at the source is satisfied
V14 p F2 7 par 2	Published information regarding background concentrations unrelated to the RFP should not be used in the COC process DOE has spent a lot of money on background characterization at the RFP and this should be the primary source As stated earlier in my comments process knowledge or historical information should be used to eliminate analytes from selection as a COC rather than published data with no relation to the RFP
V14 p F3 6 par 2	The RFP transition plan submitted to Congress and the plan submitted to the public should be summarized and referenced in the final document
V14 p F3 14 Sec F3 5 par 2	When will the data collected after August 3 1992 be available? This data should be included in the final document
V14 p F3 20 par 4	It is stated that uranium occurs in groundwater at OU 1 and that these radionuclides are tightly bound to soil particles With regard to uranium this conflicgts with Volume 1 page 5 44 paragraph 3
V14 p F3 40	With regard to the uncertainty analysis using LHS was correlation between variables included? If not Why? I would expect correlation between density and porosity moisture content and density and moisture content and porosity
V14 p F4 21 par 2	The uncertainty factors should be included in the text.
V14 p F4 21 Sec F4 4 7	Was dermal contact included for fluoranthene? If not why? Include in the final document if this was an oversight and is justified
V14 p F4 23 par 3	See comment on V14 p F4 21 Sec F4 4 7 regarding dermal contact for PAHs
V14 p F4 23 par 4	With regard to PCBs see comment V14 p F4 21 Sec F4 4 7 regarding dermal contact
V14 p F4 24 par 2	With regard to pyrene see comment V14 p F4 21 Sec F4 4 7 regarding dermal contact
V14 p F5 2 Table F5 1	Explain why exposure assessment and parameter assumptions will not possibly underestimate risk
V14 p F6 6 Sec F6 3 par 1	The reference to worst case hot spot location should be deleted Evaluation of risk at the source is required by the IAG The term hot spot should not be used unless its size is a small fraction of a 50 foot by 100 foot (approx) residential lot.
V14 p F6 7 Table F6 2	Dermal contact toxicity values associated with this table are not specified in Section F5

	Why is inhalation of Pu not included for the future on site resident? (Risk is 2 8 E 6)
	Why is inhalation of Pu not included for future onsite worker? (Risk is 2 1 E 6)
	For future onsite resident, it should be clearly indicated in the text and tables that environmental concentrations from outside the IHSSs were used to determine exposures concentrations resulting in dilution for more of a population risk number at OU 1
V14 p F6 8 Table F6 2	The use of clean area is not appropriate terminology and should be replaced
	The use of the term hot spot should be changed to risk at the source unless the hot spot size is a small fraction of an approx 50 foot by 100 foot residential lot
V14 p F6 9 Table F6 3	For future onsite resident it should be clearly indicated in the text and tables that environmental concentrations from outside the IHSSs were used to determine exposure concentrations resulting in dilution for more of a population risk number at OU 1
	Note that the HI value for the future onsite resident is equal to 1 This should be indicated in the table
	See above comments for use of the terms hot spot and clean area
V14 p F6 11 Sec F6 3 3 par 1	The term hot spot should not be used in place of risk at the source if the hot spot is larger than a small fraction of a 50 foot by 100 foot residential lot size
V14 p F6 11 Sec F6 3 3 par 1	The inhalation risk for Pu was not included in Table F6 2
V14 p F6 13 Sec F6 3 4 par 1	The inhalation risk for Pu was not included in Table F6 2
V14 p F6 18 par 2 and 3	See above comments regarding the use of the term hot spot
V14 p 6 18 par 4	Reference to OSWER Directive 9355 0 30 Role of the Baseline Risk Assessment in the Superfund Remedy Selection Decisions would be preferable to comparing risks with radon arsenic and PAHs Risk comparisons should be located in the FS/CMS report since these fall into the area of risk management.
V14 p F6 24 Table F6 6	Pu inhalation risk not included Explain why or add
	Use of the terms hot spot and clean area not appropriate See previous comments on the same
V14 p F7 3 par 3	See above comments regarding the use of the term hot spot

V14 p F7 4 par 2	Comparison of OU 1 risk with background is not appropriate for the Baseline Risk Assessment as this falls into risk management I recommend referencing the OSWER Directive presented in my comments above
V14 p F7 6 Table F7 1	Pu inhalation risk not included Explain why or add
V14 Attach F1 p 1	In the last bullet state the specific subsurface soil contaminants added for the excavation scenario
V14 Attach F1 Contaminant Ident TM p 2 14	It is not clear that a hypothesis test such as the F Test or Bartlett s Test regarding poulation variances can identify statistically significant differences between means Two populations can have identical variances while having very different means Either explain in detail how these tests can provide evaluation of the means or utilize hypothesis tests designed to test the means
V14 Attach F7 p 3 par 3	It is stated that there is typically a positive correlation between inhalation rate and body weight It is further stated that single values representative of particular conditions were not identified in EPA literature so correlation between parameters was not included in the simulations The latest issue of Risk Analysis (V 12 No 4 Dec 1992) includes an article by Smith et al entitled The Effect of Neglecting Correlations When Propagating Uncertainty and Estimating the Population Distribution of Risk This article as well as those included in the references should be used either to 1) indicate that this particular correlation is not significant or 2) use the references to generate the correlation between inhalation rate and body weight and include in the risk calculations
V13 Env Eval	No evaluation is made regarding current or future potential impacts to migratory birds Migratory birds are trust resources of the U S Department of the Interior and the Colorado Department of Natural Resources This is a critical issue to the natural resource trustees and should be included in the final document In addition no evaluation is made regarding current or future potential impacts to listed and proposed endangered species These species are trust resources of the U S Department of the Interior and the Colorado Division of Wildlife This is a critical issue to the natural resource trustees and should be included in the final document
V13 p ii Secs E3 5 5 E3 6 2 and E3 7 3	Although a generic discussion of uncertainty is included in these sections no evaluation of uncertainty is included in sections E4 0 E5 0 and E6 0 The final document should contain a complete evaluation of uncertainty in these sections
V13 p xv par 3	Isn t the objective of the EE to determine whether these contaminants have or may adversely impact ecological receptors?

V13 p E 1 par 2	It is stated that EE s are not intended to prove cause and effects However the EE should be designed to establish whether injury to biological resources as defined in 43CFR Part 11 has occurred or may occur in the future In the case where there either is or may be injury it will be necessary to prove or disprove cause and effect This is a significant issue to DOE as a PRP and as a trustee and is also a significant issue for the remaining natural resource trustees
V13 p E 5 par 3	DQOs were not identified as called for in EPA guidance and the NCP DQO development along with the FSP were prepared after the ecological field work was completed Furthermore conceptual model development was weak determination of data needs and determination of data analysis protocol postdated the ecological field work Although the IAG schedule may have driven this poor utilization of DQOs the fact remains that the scoping process for the EE was flawed from the beginning
V13 p E 43 Sec E3 6 1	Regarding the data sources used in the exposure assessment, it is noteworthy that exposure assessment modeling was not integrated for the human health and ecological risk assessments This is indicated by no reference to exposure assessment modeling from the human health risk assessment Section VIII C Attachment II of the IAG states that DOE shall utilize the Interim Final Risk Assessment Guidance for Superfund Environmental Evaluation Manual in preparing this (EE) plan Inspection of page 41 of this document indicates that exposure assessment modeling is an integral part of the EE The final document should integrate the human health and ecological exposure assessment modeling as appropriate and should goe beyond the modeling for human health if necessary for the EE
V13 p E 51 Sec E4 1 1 par 1 and 2	Why does the conceptual model not include sediments? Given that sediments were not evaluated for PCBs and PAHs which occurred in OU 1 surficial soils can we have confidence that the conceptual model is complete?
V13 p E 52 Sec E 4 2	See my comments on V13 p E 43 Sec E3 6 1
V13 p E 54 par 1	The use of two three five and six times background is arbitraty The significance of background exceedences should be related to process knowledge historical information etc
V13 p E 55 par 2	With regard to chromium in soils is the chromium in the the uppermost (thin) soil horizon or is it in the upper six feet of the vadose zone? How effective will the organic layer be in influencing the state of chromium in the vadose zone?

	What is the depth of the high organic soil relative to the chromium? What is the depth of high pH soil relative to chromium?
V13 p E 61 par 1 1st sentence	What is the impact on the EE of having no sediment data available within the OU 1 study area? Does this have an impact on uncertainty?
V13 p E 61 Sec E 4 2 5	Both PCBs and PAHs were identified in surface soils at OU 1 What impact is there on the EE for not including these as target analytes for biota?
V13 p E 62 Sec E4 3 1 par 1	It is arbitrary to establish a cutoff at a value of two times the background value What is the point of spending millions of dollars defining background at the RFP if we will not adhere to it Again I question the design and data analysis of the RFP background characterization study
V13 p E 71 par 1	This paragraph indicates that Rock Creek is not a particularly good reference area Is this true? If so what are the implications for the EE and injury determination/quantification per 43CFR Part 11? If not additional text should be included as to why we believe Rock Creek is useful as a reference or control area.
V13 p E 73 par 2	It is stated that all endpoint differences for these habitat comparisons are explainable by site differences What does this indicate regarding Rock Creek s utility as a reference or control area?
V13 p E 75 par 3 and V13 p E 78 par 3	See my comment on V13 p E 62 Sec 4 3 1 par 1
V13 Figure E3 5 1 and V13 Figure E4 1 1	See my comment on V13 p E 62 Sec 4 3 1 par 1
V13 Figures E4 2 1 and E4 2 2	Where are the data for PAHs and PCBs in surficial soils at OU 1? This is a serious omission which sould be corrected in the final document
V13 Attachment E A	Why aren t PAHs and PCBs included in this Attachment? They should be added in the final document